

WHAT IS CLAIMED IS:

1 1. A conduit for dispensing two or more different liquid types to crops, the
2 conduit comprising
3 a first channel for conveying a first liquid type;
4 a second channel for conveying a second liquid type; and
5 a plurality of outlets spaced at intervals for dispensing both the first and
6 second liquid types, wherein each outlet is used to dispense both the first and second liquid
7 types.

1 2. The conduit of claim 1, further comprising
2 a first capillary tube is coupled between the first channel and a first outlet;
3 and
4 a second capillary tube coupled between the second channel and the
5 second outlet.

1 3. The conduit of claim 1, further comprising
2 a valve for controlling the dispensing of a liquid type; and
3 a computer coupled to the valve for automating control of the valve.

1 4. The conduit of claim 1, wherein the conduit is a flexible tube containing
2 the channels.

1 5. The conduit of claim 1, wherein the first liquid type is water and wherein
2 the second liquid type is an insecticide.

1 6. The conduit of claim 1, wherein the first liquid type includes a fungicide
2 and wherein the second liquid type includes a nutrient.

1 7. A conduit for monitoring and maintaining crops, the conduit comprising
2 a channel for conveying a substance for distribution to crops;
3 a plurality of outlets spaced at regular intervals to allow the substance to
4 exit the channel; and
5 a plurality of sensors spaced at regular intervals and coupled to the
6 conduit.

1 8. The conduit of claim 7, wherein the sensors include solar sensors.

1 9. The conduit of claim 7, wherein the sensors include optical sensors.

1 10. The conduit of claim 7, wherein the sensors include moisture sensors.

- 1 11. The conduit of claim 7, wherein the sensors include insect detectors.
- 1 12. A system for automated application of insecticide to a plant, the system
2 comprising
3 an insect sensor positioned adjacent to the plant;
4 a control system coupled to the insect sensor for receiving a signal from
5 the insect sensor;
6 a conduit for conveying an insecticide to the plant; and
7 a flow control system coupled between the control system and the conduit
8 for allowing the control system to control the flow of insecticide to the plant in response to the
9 insect sensor.
- 1 13. The system of claim 12, wherein the insect sensor includes a protein
2 sensor.
- 1 14. The system of claim 12, wherein the insect sensor includes a DNA sensor.
- 1 15. The system of claim 14, wherein the control system includes
2 a process for determining the type of insect detected by the insect sensor based on
3 a signal from the DNA sensor.
- 1 16. A system for automated application of water to a plant, the system
2 comprising
3 a sensor positioned adjacent to the plant so that an amount of light
4 detected by the sensor varies with the size of the plant;
5 a control system coupled to the sensor for receiving a signal from the
6 optical sensor;
7 a conduit for conveying water to the plant; and
8 a flow control system coupled between the control system and the conduit
9 for allowing the control system to control the flow of water to the plant in response to the sensor.
- 1 17. The system of claim 16, wherein the sensor includes a leaf wetness sensor.

1 18. A system for automated application of nutrients to a plant, the system
2 comprising
3 an light source;
4 an light detector positioned with respect to the light source and the plant
5 so that light from the light source is directed to the plant before being directed to the light
6 detector;
7 a control system coupled to the light detector for receiving a signal from
8 the light detector;
9 a conduit for conveying nutrients to the plant; and
10 a flow control system coupled between the control system and the conduit
11 for allowing the control system to control the flow of nutrients to the plant in response to the
12 light detector.

1 20. The system of claim 19, wherein the light detector is an infrared light
2 detector.

1 21. A system for automated application of fungicides to a plant, the system
2 comprising
3 a sensor for detecting at least one factor related to plant disease;
4 a control system coupled to the sensor for receiving a signal from the
5 sensor to indicate the at least one factor related to plant disease;
6 a conduit for conveying fungicides to the plant; and
7 a flow control system coupled between the control system and the conduit
8 for allowing the control system to control the flow of fungicides to the plant in response to the
9 signal from the sensor.

1 22. The system of claim 20, wherein the control system uses a disease risk
2 model to determine the desired flow of fungicides to the plant.